

## REMARKS

**Office action summary.** Claim 1 and claims dependent on 1 are rejected as lacking written description on account of the reference to a “removable” substrate. Claim 3 is rejected as lacking written description and its also rejected as indefinite on account of the term “secured by technological means.”

Claims 1-9, 11-17, 21-22, 30-43, 91, 96-103 and 107 are rejected as obvious over Virtanen (U.S. Patent No. 6,342,349) in view of Hammock et al (U.S. Patent No. 6,395,562).

Claims 1, 2-9, 11-13, 18-27, 31-32, 37, 39-40, 42-44, 91, 93-95 are rejected as obvious over Nova et al. (U.S. Patent No. 6,284,459) in view of Virtanen.

The rejections of claim 3 are believed to be overcome by amendment. The remaining rejections are traversed for the reasons discussed below.

**Section 112 rejections.** For there to be support in a specification for a claim limitation, it is not necessary that the claim limitation be literally present in the specification. It is sufficient if the specification indicates to those of skill in the art that inventors had possession of the invention defined by the claim limitation (together with the remaining limitations) at the time of filing of the application. *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991).

It is believed that the term “removable” as applied to the substrate is supported by the discussion of removing the slide for washing near the end of Example 2. It is also supported by the discussion of production runs on page 17, where the use of the term “production runs” of arrays implies that the array (on the substrate) can be removed from the machine that makes the array, once the array is made, so that the next production run of arrays can occur. The Examiner writes that “the specification does not teach or describe the meaning or scope of the newly claimed substrate,” but the specification does not have to define a word like “removable” which is commonly understood by persons of skill in the art.

In claim 3, without conceding the correctness of the rejection, the language objected to by the Examiner has been removed in order to facilitate appeal.

**Indefiniteness rejection.** It is believed that the indefiniteness rejection of claim 3 is overcome by the present amendment. Rather than describing the goal which is achieved (securing of information by technological means), the claim now recites the means in the claimed device which contributes to the accomplishment of that goal, a means for interoperating with a computer chip on the substrate which can perform security functions. This is supported

by the recital (pp. 32-33 of the specification) of a computer chip within a smart card, by the recital of various ways of communicating with the smart card, and by the knowledge of those of skill in the art that a smart card can perform security functions under the direction of its computer chip and is commonly used to perform such functions.

**Obviousness rejection of claim 1 over Virtanen in view of Hammock.** It is somewhat difficult to understand the Examiner's rejection of claim 1 over Virtanen in view of Hammock. The Examiner recites that the "the claimed 'source' is broadly consist[ent] with . . . anyone of the sources disclosed by Virtanen." (Office action at 4.) However, the word "source" is no longer found in claim 1. It was removed in the prior amendment on account of a written description rejection.

Claim 1 reads as follows:

1. (previously presented) A device for performing an experiment with a target moiety, comprising:
  - (a) a removable substrate having
    - (a1) a plurality of probe moieties each attached to a designated site on a surface thereof; and
    - (a2) machine-readable information relating to the probe and/or target moieties;
  - (b) a fluidic device for bringing the target moiety in contact with the plurality of probe moieties,
  - (c) an apparatus for measuring characteristics of the interaction between the plurality of probe moieties and the target moiety;
  - (d) a machine for
    - (d1) reading some or all of the machine-readable information found on the substrate,
    - (d2) commanding the device to apply a substance or condition that induces a response from the probe and target moieties, taking as an input some or all of the machine-readable information found on the substrate,
    - (d3) receiving the characteristics of the interaction as measured by the apparatus for measuring, and
    - (d4) taking as inputs some or all of the machine-readable information found on the substrate and the characteristics of the interaction, ascertaining some characteristic of the target moiety.

The Examiner's rejection does not explain why the particular claimed characteristics of the operation of the machine, recited in clauses (d1)-(d4), are present in the combination of Hammock and Virtanen (if that is what the Examiner is contending). The Examiner notes that "computer-controlled solution application" (presumably meaning something sort of like the first clause of step (d2)) is *not* taught by Virtanen, and then points to the abstract and column 3, line 56 to column 4, line 6 of Hammock as making up the deficiency. However, there is no statement

there that machine readable information found on the substrate is taken into consideration in deciding what substance or condition will be applied to the substrate, as in element (d2).

Furthermore, there would also appear to be no discussion of what is recited in element (d4). For this reason, it is believed that the combination of Hammock and Virtanen does not result in the applicants' invention as claimed.

The Examiner's motivation for combining Hammock and Virtanen also would not seem to be clear and particular as the law requires. *See, e.g., In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). The text on which the Examiner relies at column 2, lines 8-12 of Hammock merely says "a need remains for highly automated assay devices and sample array holders, useful for environmental monitoring, clinical screening, and the like, so as to perform analyses efficiently at reasonable cost." Generalized statements of the need for improvement of this nature are found in a great many patents. If such statements sufficed to create a motivation to combine, a great many patents would be combinable with more or less anything.

**Obviousness rejection of claim 1 over Nova in view of Virtanen.** As with the combination of Hammock and Virtanen, the Examiner's rejection does not explain why the particular claimed characteristics of the operation of the machine, recited in clauses (d1)-(d4) of claim 1, are present in the combination of Nova and Virtanen (if that is what the Examiner is contending). (Office action at 10-11.) There is no indication of where Nova discloses, for example, that machine readable information found on the substrate is taken into consideration in deciding what substance or condition will be applied to the substrate, as in element (d2). There is no indication of where what is recited in (d4) is found in Nova. The only deficiency of Nova which the Examiner identifies Virtanen as repairing is the absence of a "device for deliver[i]ng the target" (presumably element (b) of claim 1), so resort to Virtanen also does not establish why the combination of Virtanen and Nova would meet limitations (d1)-(d4) of claim 1. Because the Examiner has not shown that the combination of Nova and Virtanen would actually result in the claimed invention, the Examiner's rejection of claim 1 over Nova in view of Virtanen is not well taken.

**Dependent claims.** The above arguments with respect to claim 1 also serve to traverse the obviousness rejections of dependent claims. However, certain additional points are made here with respect to the dependent claims.

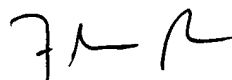
With respect to claims 2-4, it is believed that the machine readable information is in fact functional in the sense of *Gulack*. Claim 1 expressly recites the use that is made of the information. The Examiner notes that an example of nonfunctional descriptive material is where “a computer-readable storage medium . . . differs from the prior art solely with respect to . . . *music or a literary work*, recorded on the medium.” (Emphasis added.) That is not what we have here, given the recitations of use of the information in claim 1.

With respect to claims 33-36, the Examiner seems to be giving the term “x moieties per  $\text{cm}^2$ ” an interpretation which encompasses x molecules per  $\text{cm}^2$ , potentially not distinct and potentially mixed together. In the array field, however, x moieties per square  $\text{cm}^2$  forming part of an array (as recited in claims 33-36) would be understood to be x moieties that are separated spatially or otherwise distinguishable in practice. Claims 33-36 have been amended to make this distinction explicit, although it is believed that a person of skill in the art would have understood the claims to have their present meaning also prior to amendment. Support is provided by that understanding and also, for example, by the discussion of densities on page 35, whereby the densities achievable are related to the technology used to make the array. Such a relationship would not exist with the Examiner’s interpretation of “x moieties per  $\text{cm}^2$ ”; given the size of Avogadro’s number and the density of common liquids, pretty much any technology can lay down 1,000,000 indistinguishable molecules (e.g., of water) on a square centimeter of substrate.

**Conclusion.** It is respectfully requested that the pending rejections be withdrawn on the basis of the amendments and arguments given above. Alternatively, it is requested that the amendments be entered in order to place the case in a better condition for appeal. Of course, should the Examiner wish to discuss any aspect of this response, it would be most appreciated if she would telephone applicants' counsel at (650) 251-7700.

Respectfully submitted,

By:



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